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ABSTRACT

Drawing upon successful practices by American and Canadian universities in providing educational opportunities for gifted children, this paper evaluates the feasibility of adopting similar programs in the Republic of South Africa. A rationale is presented for the role of the university in providing educational programs for gifted and talented pupils, and the goals of the university for existing gifted children programs are outlined. An overview of current practices in the United States divides the various practices into five categories: (1) acceleration through early college entrance, (2) courses lasting from 3 weeks to 2 months for students from grade 5 upwards, (3) courses offered on Saturday mornings for students from grade 4 upwards, (4) courses in specific subjects such as mathematics and science, and (5) individualized attention to gifted students by students in education. Also discussed are the advantages of gifted education programs, the problems encountered by universities, and recommendations stemming from these problems. The paper concludes with a list of gifted education opportunities that South Africa's universities should consider offering. (Author/JDD)

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THE UNIVERSITY AS A RESOURCE FOR THE EDUCATION OF THE GIFTED

- MODELS, METHODS, MYTHS AND MAYBES

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ABSTRACT

During the past decade universities in the United States of America and Canada have increasingly become aware of their role and responsibility in providing opportunities for gifted children. Talented persons in a society form a limited pool and these persons should be found and brought to the top to make the best use of their talents. Universities can provide opportunities by acceleration through early admission policies, by enrichment courses for younger scholars and/or shorter courses, or by running enrichment or accelerated programs in specific subjects. These practices have been proved successful. Maybe the time has come for South African universities to develop strategies along similar lines.

THE UNIVERSITY AS A RESOURCE FOR THE EDUCATION OF THE GIFTED - MODELS, METHODS, MYTHS AND MAYBES

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1. INTRODUCTION

For many years universities in the United States of America did not seem to respond to the needs of gifted and talented high school students. This suddenly changed at the start of the 70's as LAIRD (1972:93) reports: "But now in the early 1970's there is some evidence that far more sweeping changes are in progress than have occured during previous decades."

But do universities have a responsibility for the teaching of the gifted and talented student? STANLEY (1976:237) has a very definite point of view in this regard: "It is our responsibility and opportunity to help prevent the potential Miltons, Einsteins and Wieners from coming to the mute inglorious ends!" and he continues "... surely we can greatly extend both the reach and the grasp of our brilliant youths ..."

LAIRD (1972:94) believes that it is a myth that you can leave the gifted child alone and he will take care of himself. He blames educators for the lack of challenge presented to gifted students. "Too long gifted children have been learning in spite of, rather because of our efforts" (1972:93).

FELDHUSEN (1977:195) "found that teachers and students agree that there is a need for special attention for gifted, creative, talented and academically advanced children which teachers currently find difficult to provide".

This is even more true in the case of mathematics and science students. THOMAS (1983:27) has the following point of view: "It has always been recognized in senior high schools that the needs of the "gifted" science student cannot always be adequately met." He has the following explanation for this: "Restrictions placed on the high school teacher, such as

large class sizes, preparation of many courses, lack of appropriate facilities and equipment, and inadequate background often combine to make it impossible to provide the additional experiences that could challenge a gifted science student " (THOMAS, 1983:27).

If this is the situation, as explained by Feldhusen and Thomas, what can be the possible causes? KARNES, (1982:110) indicates the following flaws in grades 11 - 13:

° high schools are inflexible and are unable to challenge the student to move at his or her own pace;

° students are inadequately prepared for college;

° there are unnecessary repetitions in the curriculum;

° college programs are inflexible and unable to cope with differences.

LAIRD (1972:94) says that denial of diversity is at the core of the failure of the education of the gifted child.

KARNES (1981:273), in her national perspective on gifted education in the United States, reports that there is an increasing awareness amongst universities of their role in providing opportunities for gifted children. "Eight states are now conducting Governor's Honors Program, and several additional states have this option under consideration. Public and private colleges and universities in increasing numbers are conducting Saturday morning programs for elementary and secondary gifted students who live within commuting distance and are offering summer residential programs for the gifted. The practice of admitting gifted secondary school students to credit courses in colleges and universities is on the increase."

Enrichment courses at school can be potentially dangerous if not accompanied or followed by acceleration of placement (STANLEY, 1976:234). Horizontal enrichment can be nothing but busy work. It is therefor essential to consider the possibilities of acceleration by placement.

According to the Carnegie Commission on Higher Education (1971) as reported by STETSON (1971:23), undergraduate education in the U.S.A. could be

reduced by one fourth without sacrificing educational quality. Reports (vide COLEMAN, 1974 and WHITE HOUSE CONFERENCE ON YOUTH, 1971) appear to support the appropriateness of acceleration for the intellectually gifted student (KARNES, 1982:68). She continues: "Evidence was practically unanimous that younger entrants were more likely to graduate, had the best academic records, won the most honors and presented the fewer disciplinary difficulties. These findings were a confirmation of the views of Pressey as reported by KARNES (1982:68), namely that "... more than half of both groups later had obtained advanced professional degrees, but that the early entrance student had earned certification, on the average, two years earlier than the comparison group."

Whatever the cause or the consequence, the fact remains that "... talented persons in a society is a limited pool and (that) such persons should be found no matter where they are in society and brought to the top to make the best use of their talents " (WILLIE, 1982:16).

2. THE AIMS OF UNIVERSITIES IN ACTING AS RESOURCES FOR THE EDUCATION OF THE GIFTED

A survey of some universities which are conducting some form of program for the gifted, brings the following aims to light:

- to give the gifted child opportunities to participate in challenging and worthwhile learning experiences (SEALY et al.,1981; FELDHUSEN 1979).

- to provide enrichment opportunities for gifted youngsters whose interest outstripped school district resources, facilities and personel (McCLEARY et al., 1983).

- to meet the needs of each student (EISENBERG et al., 1979).

- to recognize the individual differences of the highly able (EISENBERG et al., 1979).

- to combat senior year boredom among capable high school students (SYRACUSE, 1979).

- to eradicate the duplication of curriculum between the last two school years and the first two years of college (SYRACUSE, 1979).

- to provide an occasion for cooperation between the university and the public school system (McCLEARY et al., 1983).

- to offer an opportunity to students to work on a research project under the guidance of a faculty member (THOMAS et al., 1983).

- to act as a proving ground for college bound seniors (SYRACUSE, 1979).

- to honor good students, encourage their creativity and awaken their career consciousness by involving them in special enrichment activities conducted by university faculty (BRUSCEMI, 1981).

- to help parents learn ways to sustain their children's already strong interest in learning (BRUSCEMI, 1981).

- to allow high school seniors to take regular college courses in their own school and at low cost (SYRACUSE, 1979).

3. AN OVERVIEW OF SOME CURRENT PRACTICES IN THE UNITED STATES OF AMERICA

In a survey by KARNES et al. (1982:68 - 73) of early admission policies for younger than average students done during the school year 1980 - 81 in which 92 private and 98 public institutions participated, some very interesting information was obtained. To make the survey valid and representative of a national perspective, the following principles were applied:

- only four year institutions with more than 100 students per institution were included in the survey;

- a maximum of six institutions per state were included, representing small, medium and large institutions;

- "younger than average" was defined to mean students with outstanding intellectual abilities.

The results of this survey showed that between 44% and 56% of the

institutions included in the survey actually enrolled "younger than average" students. On a part time basis this ranged from 1 - 100 students while those admitted on a full time basis varied from 1 - 150.

Seventy-five percent of these institutions did not require any minimum age for admission. Admission ages ranged from 14 - 17.

Between 67% and 75% of the institutions required a minimum grade point average.

Between 69% and 76% required a recommendation from the high school.

Between 36% and 45% required an interview as part of the early admission process.

Between 60% and 62% did not require parental permission for early admission.

An analysis of the various practices employed by universities could be divided broadly into five categories, namely:

1. Acceleration through early college entrance.

2. Courses lasting from three weeks to two months, including students from grade 5 upwards.

3. Courses offered on Saturday mornings for students from fourth grade upwards.

4. Courses in specific subjects such as mathematics and science.

5. Individualized attention to gifted students by students in education.

To be able to form a better understading of the practices employed, each of these categories will be briefly discussed.

3.1 Acceleration through early college admission

At Florida Atlantic University high school graduates are allowed to save

a year of baccalaureate work in a program called the "Faculty Scholars Program". Students are selected on recommendation by the high school guidance counsellor, College Level Examination Program scores at or above the national mean, competence in English composition and a recommendation by a faculty member based on a personal interview.

As a Faculty Scholar the student would receive on his transcript 45 hours of credit by examination in general education and be admitted to Florida Atlantic as a junior. The minimum requirements for a baccalaureate degree were set at 135 quarter hours - 90 hours to be taken in the major and cognate fields, and 45 hours to be taken outside the majors and selected according to the student's interests and weaknesses. Thus the baccalaureate degree could be completed in 9 quarters or less if the student chose to register for more than the average course load each quarter.

On the average the students have done well academically. Grade point average based on a 4,0 scale is 2,97 for those who have enrolled for two years and 2,76 for those in their first year. The overall university average is about 2,57.

At Syracuse University similar acceleration procedures are available although there is an important difference in the practice employed.

Courses are taught by carefully selected high school faculty members who attend special Syracuse University workshops and seminars. They are trained by regular Syracuse faculty and are subsequently designated, if qualified, as associate instructors of Syracuse. Under the supervision of Syracuse faculty, these associate instructors may then teach the course as part of their regular teaching load. Associate instructors must have certain minimum qualifications and at least five years' teaching experience. Students who successfully complete their course work, are entitled to a regular Syracuse transcript.

The credits earned by the student can be transferred to most colleges and universities around the country.

In 1979 Project Advance was the largest program of its kind in the U.S.A. (SYRACUSE, 1979). When the program was initiated in 1973, six pilot

schools were involved. By 1979 this had grown to 76 high schools and 4000 students. Courses are offered in Biology, Calculus, Chemistry, English, Psychology, Religion and Sociology. These courses are identical to the ones offered to Syracuse students on the campus.

Students who have successfully completed the secondary school curriculum through the eleventh grade are eligible to participate in the program. Selection is left to the school teachers and guidance staff. Experience has proved that students with a B average or better can manage the courses.

Project Advance students have performed at least as well as and in some cases better than their on-campus counterparts. Course work credits are in most cases successfully transferred toward degree programs.

Ninety-five percent of Project Advance students (up to 1981) have completed their degree work. This represents a rate of degree completion that is nearly 2½ times greater than the national average. Ninety-one percent of those completing their degree requirements achieved an average letter grade of B or better.

3.2 Courses lasting from three weeks to two months, including students from grade 5 upwards

Since 1980 six hundred students from Virginia and surrounding states have been participating in one of the three two-week sessions that are offered in June and July at the University of Virginia (Charlottesville).

Two programs, known as the 5 - 8 and the 9 - 10 program, have been in use.

Students for the 5 - 8 program are selected on the basis of aptitude, achievement, creativity and motivation. Assignments are given on age and subject matter preferences to in-depth investigation classes which meet for three hours each morning. Students choose one of four areas and work with "master Teachers" during this time.

Two types of activities are offered in the afternoons:

1) Special topics where students are allowed to select from a wide

variety of lectures, demonstrations, tours and discussions provided by the faculty; each student selects and attends a different special topic every day.

2) Afternoon seminars where students select one seminar topic from fourteen options such as filmmaking, classical music, computer programming, etc.

The 9 - 10 program consists mainly of independent study. Admission is determined by a review of student applications which consist of a proposed plan for study and letters of recommendation.

The structure and topics of study are determined individually by each student who is expected to carry out the study in a scholarly manner while in residence at the university for the two-week session. The teachers who work with these students assist them in developing independent study skills, identifying and locating resources, acquiring supplies and equipment and contacting and scheduling time with resource persons.

Other activities which form part of the programs at the University of Virginia include sports, arts and crafts, folk dancing, films, games and quiet time. Opportunities do exist for teachers to become part of teaching teams with master teachers.

At the University of Utah (McCLEARY, 1983:661 - 662), university professors act as mentors to gifted middle-graders.

This project started off with a two month correspondence between the students and their mentors.

Teachers and principals identified students and their specific areas of interest. One teacher at each school was selected to co-ordinate the project at school level and to attend on-campus activities.

Departmental heads identified individual professors in their fields who might be willing to act as mentors. Faculty mentors from the fields of Biology, Chemistry, Mathematics, Political Science, Law, English, Computer Science, Physics and Theatre agreed to participate in the project.

Then students and mentors were matched. The students wrote letters to their mentors telling them about themselves and their interests and a two month dialogue was started. Between two and eight students were assigned to each mentor (average four). In total the students were limited to forty.

When the students were brought to the campus (one day), they were given the opportunity to take a first hand look at university research and campus life. The admission requirements of the university and the possibilities for early registration were explained. The extended earlier contact between mentors and students made it easier for the mentors to plan beneficial on-campus experiences for their students.

At the University of Denver one, two or three week long courses for gifted students were offered. The courses were limited to 15 students.

Students had to be identified by their school or nominated by their principal and teacher for the specific course.

The students had to be performing at least two grades higher than average in academic areas or have a specific outstanding aptitude for courses in the Art, Music or Psychomotor areas. The students had to be "producers" rather than just consumers of knowledge. Parent seminars were also presented and met with overwhelming response.

3.3 Courses offered on Saturday mornings for students from fourth grade upwards

At the University of Texas a program involving about 350 fourth through eighth-grade youngsters and their parents was developed. Students and parents attended courses covering a variety of topics from designing and building a soap box derby to racer demonstrations of the use of lasers in holography. These were scheduled on two consecutive Saturday mornings.

A committee at each elementary, middle and junior high school selected six students to participate in the program. Twenty-two professors from universities in North Texas accepted invitations to teach mini courses, conduct seminars and direct laboratory/workshop sessions.

For the parents two three-hour sessions dealt with ways to improve children's reading and to encourage their creative thinking.

3.4 Courses for specific subjects such as Mathematics and Science

Since 1979 the University of Calgary in Canada has been running a university science enrichment program for gifted high school students.

Possible candidates are approached by their high school science teachers and if accepted into the program, work at the university for a minimum of three hours a week for a semester.

At the beginning of each semester they receive a list of professors who are willing to accept a student for that term. Each professor provides a brief description of the research project on which he would like the student to work, his requirements as to the number of hours he would expect the student to work each week and the times he would be available to work with the student.

This information is circulated to science teachers. Interested students apply for inclusion in the program, choosing three projects from the list as their first, second and third preferences. The science teacher includes a written recommendation for the student's acceptance into the program including an anecdotal report on the student's background. The parents' and an administrator's approval complete the application.

The selected students, the professors and the co-ordinators meet during the morning of the orientation day. The program is described and the students are taken on a tour of the department. At luncheon the group is joined by the recommending teachers. This is followed by a library tour.

After each professor and student have agreed upon a mutually convenient day and length of time to meet (typically three hours at the university and two hours study at home each week) the students begin working on their projects.

The most successful topics are those in which the student's project is part of the ongoing research work in the professor's laboratory. At

the end of the semester an "End of Project" seminar is held. The students give a five to ten minute talk on their projects.

3.5 Individualized attention to gifted students by students in education

"Students in education have to develop a comprehensive plan for the assessment of a child's giftedness, talents and creativity. They must develop a plan for enrichment activities to be carried out with a child. This includes plans for field trips, reading and other project activities" (FELDHUSEN, 1973:126).

Feldhusen teaches a course "Gifted, creative and talented children", which is open to graduate and undergraduate students. Because it is taught in the evenings, many teachers enroll. During the summer it is taught as a four week workshop. Student numbers are limited to 35. The course consists of six units, based on self instructional guides, and is mastery oriented. Students can improve their performance to the grade level they are working for. Class sessions are devoted to active learning.

Children from area schools are selected for participation in the program by teachers from kindergarten through grade ten.

Children are organized into grade level groups of 8 to 12 children and each group is led by one Purdue student. The Purdue students meet with their groups once a week for 1½ - 2 hours.

The parents are met twice during each semester and each summer session and they have been giving their on-going support and encouragement. Continuing efforts are made to provide guidance to the parents.

4. PROVEN ADVANTAGES OF THE SYSTEMS IN USE

The programs for gifted students outlined above were all evaluated very positively (STANLEY, 1976:112; FELDHUSEN, 1977:200; HICKEN, 1981:28). All the evidence is highly positive. Some of the proven advantages are the following:

° The students develop a sense of responsibility when choosing and

registering for their own courses.

- The students get a chance to work on an original research project.
- They become familiar with the university environment and the variety of subjects offered by the university.
- They learn more about their specific areas of interest.
- The faculty learn a great deal from involvement in these programs, especially from the chance to work with school systems and members of the community.
- It provides excellent public relations and some students may choose to enroll at the host university.
- Communication between teachers and faculty members (participants and supporters) improved.

Students did not generally feel handicapped by leaving high school early, in fact they were glad to leave the stultifying classroom (STANLEY, 1976:112). In a follow-up study at John Hopkins University, scholars endorsed early entrance as a viable mechanism (STANLEY, 1976:112).

Scholars adjusted to campus life as well as their comparison group and their class mates. Their gradepoint averages were higher than those of the general student population.

Teachers rated the experience as very beneficial and highly motivating (McCLEARY et al., 1983:662). Taylor, quoted by HICKEN (1981:28), remarked that teachers "... changed their roles to be igniters of talents, catalyzing, culturing and developing a variety of world-of-work talents in students by using knowledge as their means to that end".

The success of these programs demonstrated that the most productive and creative years of professional scientific activity occur early in a person's life, often in his or her early twenties (STANLEY, 1976:113). ZUCKERMANN (1977), commented as follows: "Those who do well when they are young, have a better chance to continue to do well as they get older".

Gifted, creative and talented children and their parents need to be singled out for special attention. This motivates them to take on educational activities and it builds their self concepts (FELDHUSEN, 1977:129).

By providing gifted children with opportunities for acceleration or enrichment, universities seem to be meeting important needs of the students, the parents and the community.

5. PROBLEMS ENCOUNTERED BY UNIVERSITIES IN ACTING AS RESOURCES FOR THE EDUCATION OF THE GIFTED

The worst problems expected by some of the universities involved in the previously explained practices, never materialized. It was expected that students on early admission to university courses would experience problems with social and emotional adaptation. This is apparently not the case (STETSON, 1971:25; EISENBERG et al., 1979). No proof has been found for this assumption although it must be admitted that a fair amount of doubt remains. The students themselves report that they enjoyed their courses and thrived on the competition and association with older students.

As regards some of the other models which were described under paragraph 3.2 and 3.3, students reported that they would have liked to explore their individual interests to a greater degree. They felt that they were capable of handling their subject areas in more depth and specificity than the program afforded. Faculty members indicated that they would prefer smaller groups to ensure more personal contact with individual students (McCLEARY et al., 1983:662).

The recommendations stemming from these problems which were encountered, could be summarized as follows:

- group size should not exceed five students
- opportunities should be given for more advanced discussion in their areas of interest
- teachers recommended more experiences of this kind and an increase in the number of students and mentors participating.

The overall impression and feeling of participants can best be expressed by the words of McCLEARY et al. (1983:662): "This was an activity in which the university should be engaged."

6. CONCLUSIONS

Facilitating the academic programs of highly talented youths is crucially important. There is no evidence to suggest that young, highly talented students would perform and adjust better if they waited the extra year or two. In fact, acceleration appears to reduce academic mortality (EISENBERG et al., 1979:117). The highly talented youths do as well as or better than their older classmates. Academically the youngest students on average did significantly better than the oldest students. More of them made the dean's list. Fewer had averages of C+ or lower.

Early entrance to college is an alternative for intellectually talented youths who are eager to move ahead educationally. It certainly is a viable mechanism to enable gifted individuals to avoid the oppressive atmosphere of unneeded years of high school and to give them more years in which to be be creative and productive (EISENBERG et al., 1979:117; KARNES et al., 1982:72). They can then spend their most productive years as practitioners rather than as students.

Universities are also enabled to attract some of the best high school graduates who would want the opportunity to save a year in their Baccalaureate work (STETSON, 1971:25).

As far as other models and methods are concerned, the programs proved to be viable and of significant importance to the particular communities.

7. MAYBES FOR SOUTH AFRICAN UNIVERSITIES

Very little has been documented as far as acceleration and enrichment programs for gifted and talented students by South African universities are concerned. This makes it impossible to provide an objective and authoritative perspective. The work of the Schmerenbeeck Educational Centre, known as Projects Plus and run for pupils by the University of the Witwatersrand, is well known. Universities may be informally involved in providing enrichment programs for pupils through societies such

as STIMULUS (Stellenbosch). Many other informal projects such as Olympiads, Youth Scientists, sports coaching courses, the development of artistically talented pupils (music, art) are known, as well as a leadership development project for head prefects of secondary schools in the Cape Province (University of Stellenbosch). Universities may be (secretly?) involved in providing early admission to gifted and talented students. This has not yet been recorded.

The fact remains that both universities and the community could benefit from a system which would provide limited opportunities such as the following:

- early admission for highly gifted and talented students in close collaboration with the appropriate education department and within limited parameters acceptable to the university, the academic staff, the education department, the student and the parents of the students;

- more flexibility in the structuring of courses to enable students to do more subjects from a wider range;

- the offering of enrichment courses for gifted and talented students in subjects such as Mathematics, Physics and Chemistry;

- involvement in ad hoc courses of an interesting and challenging nature on Saturdays or during school holidays to provide challenging learning experience;

- more involvement in planned and systematic leadership development and training providing various opportunities and ensuring definite feedback and follow-up operations;

- increased opportunities for individualized attention by providing student teachers with practical experience of teaching gifted pupils during internships;

- educating the parents of gifted students by offering regular courses;

- developing specialized teacher training courses.

There are many obstacles which have to be overcome before universities in South Africa can effectively respond to the needs of gifted pupils as regards early admission and/or acceleration. These obstacles may be regarded as both structural and psychological. The structural barriers may be attributed to a much more rigid educational system which may not allow individual pupils to complete their secondary school education in less than twelve years and a higher education system which may find it difficult to administer individual students following accelerated courses.

The psychological barriers may be particularly present in the higher education system and could be attributed to the fact that the achievement of many "ordinary" students will not compare favourably with the achievement of students with early admission or on accelerated courses.

Despite all the possible disadvantages or barriers presently encoutered, universities surely ought to investigate the possibilities of early admission as well as possible means of providing enrichment opportunities for gifted and talented pupils in other school standards. By doing this at an early stage, young scientists and potential researchers or academics may be nurtured, enabling them to be far more creative and productive than now. This obviously merits further discussion and investigation, because South Africa needs to utilize all the potential of its human resources.

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